H615

HOT Cooled MWIR Module

Product Manual

V1.0.1

Historical Versions

Version	Time	Description
V1.0.0	2024-07	Initial release
V1.0.1	2024-09	Update product performance parameters and structural drawings

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1. Product Description

The H615 Medium-Wave HOT Cooled Infrared Module is provided with the high-performance T2SL Cooled Infrared FPA, is designed with SWaP, and is carried with the self-developed image processing algorithm. It works flexibly and reliably and has short time to image. It supports multiple digital video interfaces, is equipped with multiple fixed focus and continuous zoom lenses, and is widely applied in the miniaturized payload, handheld, thermal scopes, border and sea defense, C-UAS and other scenarios. SDK is provided, which is simple and easy to use, reducing secondary development costs.

2. Lens Options

Table 2.1 Lens Options

Array Size	Focal Length/F#	Lens Type	FOV H×V	IFOV
640×512	50mm/F4.0, compatible with F5.5	Straight fixed focus	10.97°×8.78°	0.300 mrad
640×512	18-275mm/F5.5	Straight continuous zoom	2.0°×1.6°～29.86°×24.08°	0.055 mrad
640×512	15-300mm/F4.0	Straight continuous zoom	1.83°×1.46°～35.49°×28.72°	0.050 mrad
640×512	33-660mm/F4.0	Straight continuous zoom	0.83°×0.66°～16.55°×13.27°	0.023 mrad
640×512	40-800mm/F4.0	Straight continuous zoom	0.68°×0.55°～13.68°×10.97°	0.019 mrad
640×512	88-1100mm/F5.5	Straight continuous zoom	0.5°×0.4°～6.24°×5.0°	0.014 mrad

3. Product Performance Parameters

Table 3.1 Product Performance Parameters

Performance Indicators	
Detector Type	T2SL Cooled Infrared FPA
Resolution	640×512
Pixel Pitch	15μm
Frame Rate	50Hz/30Hz（1）
F#	F4.0/F5.5
Spectral Band	3.7～4.8μm
NETD	≤20mK@F4.0，25°C/≤25mK@F5.5，25°C
Detector Defective Pixel Rate	≤0.5%
Cooling Time@25°C	≤2.5min
Image Adjustment	
Brightness/Contrast Adjustment	Auto/Manual
Polarity	Black-hot/White-hot (default)
Cross Reticle	Display/Blank/Move
Digital Zoom	1.0~8.0× continuous zoom (step size: 0.1)
Image Processing	NUC
	DNR
	DDE
Image Flip	Horizontal/Vertical/Diagonal mirror image
Power Supply	
Power Supply Range	12±0.5V DC
Power Consumption@25°C	Stable power consumption ≤5.5W, peak power consumption ≤11W@Cameralink/ Stable power consumption ≤6.5W, peak power consumption ≤12W @ SDI.
Interface	
Analog Video	PAL
Digital Video	Cameralink/SDI
Serial Communication Interface	RS422 (default baud rate: 115200)
External Synchronization	Internal synchronization (default)/External synchronization output/External synchronization input/Adaptive synchronization
Physical Characteristics	
Weight (g)(w/o lens,±5%)	337g

Dimensions (mm)(w/o lens, ± 2mm)	69.2mm×76.7mm×51mm
Environment Adaptability	
Operating Temperature Range	-40°C～+60°C
Storage Temperature Range	-45°C～+65°C
Temperature Shock	-45°C～+65°C（≤5°C/min）
Random Vibration	4.16g (2)
Impact	Final peak sawtooth wave, 30g, 11ms (3 times in 3 axes and 6 directions)
MTTF	≥20000h
Storage Life	≥10 years

Note:

(1) Frame rate: CameraLink, 50Hz by default; SDI, 720P@50Hz/1080P@30Hz, optional;

(2)Random vibration: 10Hz~80Hz, 0.02~0.04g2/Hz; 80Hz~350Hz, 0.04g2/Hz; 350Hz~500Hz, 0.04~0.02g2/Hz; 3 axial directions x, y, z, 5min per axis.

4. Selection of User Expansion Components

Table 4.1 Selection of User expansion Components

Model	Interface
01-Cameralink User expansion Component	● Power supply interface ● RS422 serial communication interface ● PAL analog video interface ● Cameralink digital video interface ● External synchronization signal interface
03-SDI User expansion Component	● Power supply interface ● RS422 serial communication interface ● PAL analog video interface ● SDI digital video interface ● External synchronization signal interface

5.Structure and Dimensions

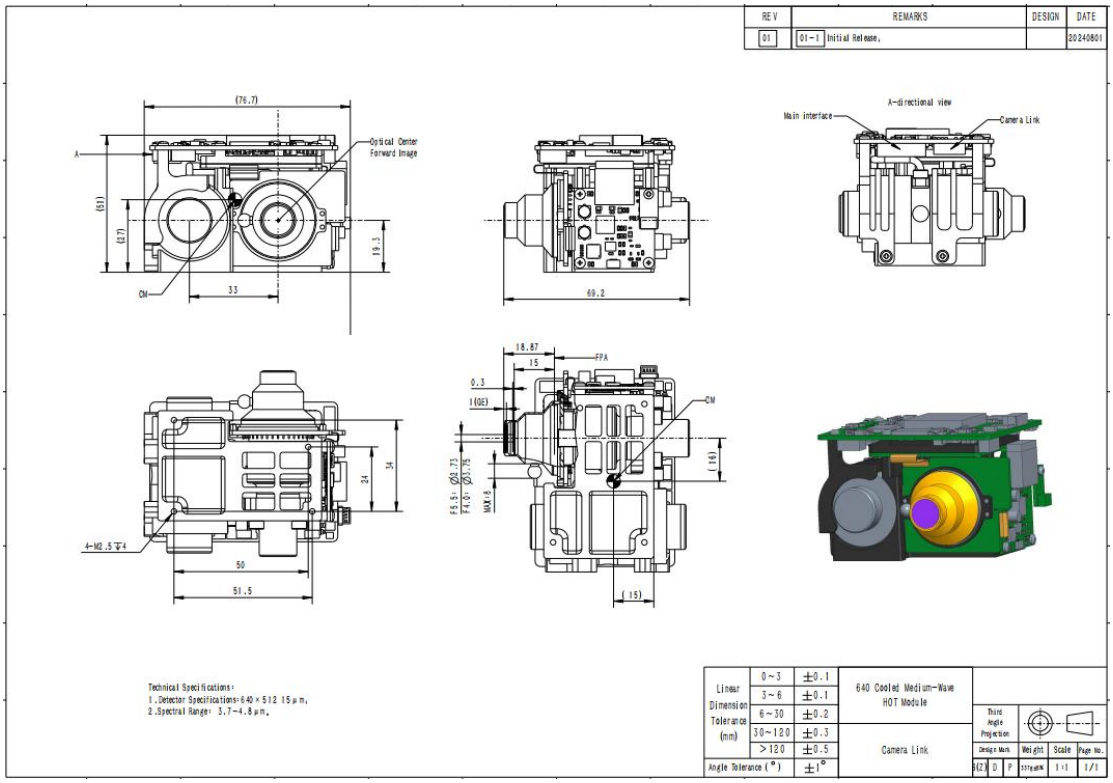

Figure 5.1 Structures and Dimensions of 01-Cameralink User expansion Component without Lens

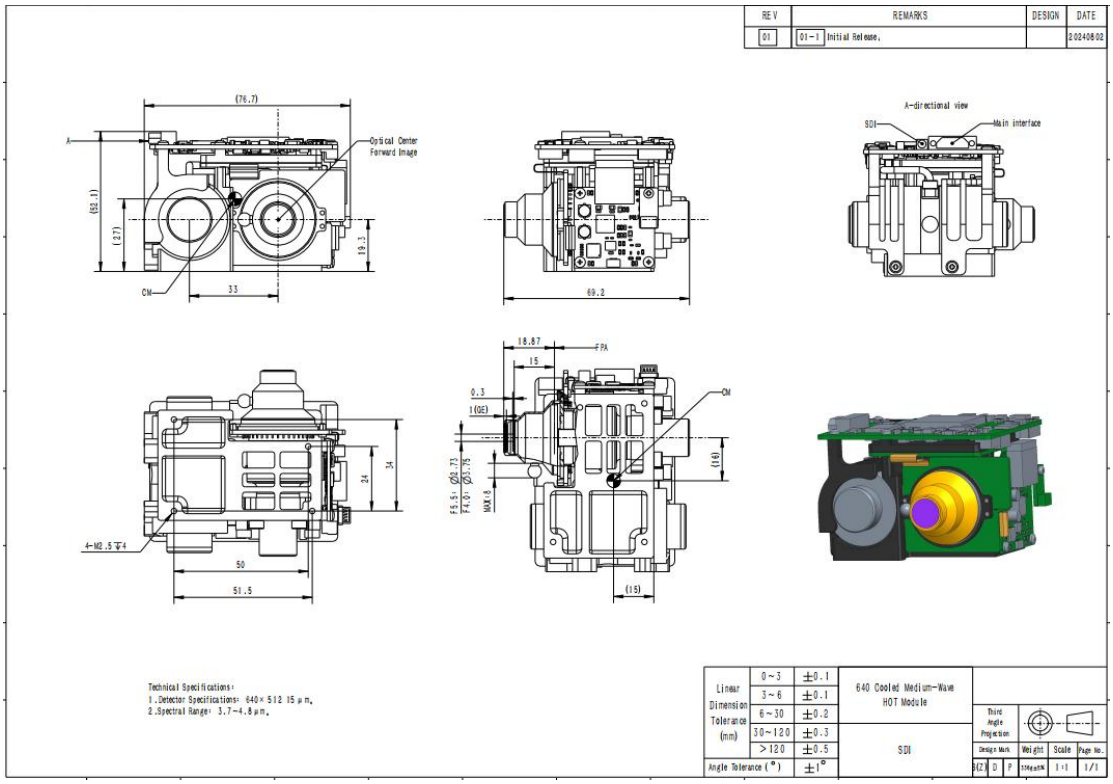

Figure 5.2 Structures and Dimensions of 03-SDI User expansion Component without Lens

Note: *After being suitable for different lenses, the structure has different dimensions.*

6. Precautions

To protect yourself and others from harm or to safeguard your device from damage, please read all the following information carefully before using your device to avoid affecting your warranty rights.

1. The ideal ambient temperature is -20°C to 50°C, and the module should be powered on as per the product requirements for ambient voltage. Malfunctions caused by abnormal power-on are not covered in the warranty.
2. Do not touch the detector window with your hands or collide with them by using any objects;
3. Do not touch the module and cables with wet hands, and do not bend or damage the connecting cables.
4. Unauthorized updates to the module program are prohibited. If updates are required, please contact technical support. Unauthorized disassembly of the module is prohibited. In case of a malfunction, please contact technical support for guidance and repair. Any malfunctions caused by unauthorized repairs will not be covered by warranty.
5. Do not use chemical solvents or diluents to clean any part of the module. You can use a special lens cleaning cloth to clean the detector window. Under electrostatic protection conditions, it is allowed to use an anti-static brush or a clean, soft, dry cloth to clean the mechanical shell and circuit board surface.
6. Do not plug or unplug other cables without disconnecting the power;
7. Do not connect the provided cables incorrectly to prevent damage to the module. If the cables cannot be inserted smoothly, do not insert and remove them forcibly. Please check whether the pin is crooked, whether the insertion position is incorrect, or whether the plug is reversed.
8. Pay attention to the prevention of electrostatic discharge. When handling the module, wear an anti-static wristband and finger cots. Avoid direct contact without protection.
9. The time interval between shutting down and restarting should not be less than 10 seconds.
10. During use, adapt the integral time to the scene and perform background correction.
11. Avoid damage caused by contact with other objects during use;
12. The module should be sealed in an anti-static bag and then put into shock-absorbing sponges in the package box. When not in use, please place the module in an anti-static bag for sealed storage;
13. During storage, pay attention to protecting the module against water, moisture, impact, and drops. Damage caused by improper storage or any other natural disaster is not covered by warranty;
14. When cleaning the lens, first use a blower to blow away particles and dust. Then use degreased cotton to apply lens cleaning solution and gently wipe from the center to the edges in a single direction. Replace the cotton after each wipe. During use, minimize the frequency of wiping.